

We claim:

1. A process for making tissue comprising: (a) forming a wet tissue web by depositing an aqueous suspension of papermaking fibers onto a forming fabric; (b) partially dewatering the wet tissue web while the wet tissue web is supported by a papermaking fabric; (c) drying the wet web in one or more throughdryers, wherein heated drying gas gathers moisture from the wet web as it is passed through the wet web and is exhausted from the throughdryer(s); (d) winding the dried web into a roll; and (e) recycling exhaust gas from one or more of the throughdryers to control the cross-machine directional consistency profile of the wet web at a point in the process after the web is formed and before the web is dried.
2. The process of claim 1 wherein all of the cross-machine direction moisture profile values are within ± 2 percent of the mean consistency.
3. The process of claim 1 wherein all of the cross-machine direction moisture profile values are within ± 4 percent of the mean consistency.
4. The process of claim 1 wherein the uniformity of the cross-machine direction consistency profile is increased by 2 percent or greater.
5. The process of claim 1 wherein the uniformity of the cross-machine direction consistency profile is increased by 4 percent or greater.
6. The process of claim 1 wherein the uniformity of the cross-machine direction consistency profile is increased by 6 percent or greater.
7. The process of claim 1 wherein the humidity of the recycled exhaust gas is 0.15 pounds of water vapor or greater per pound of air.
8. The process of claim 1 wherein the humidity of the recycled exhaust gas is 0.20 pounds of water vapor or greater per pound of air.
9. The process of claim 1 wherein the humidity of the recycled exhaust gas is 0.25 pounds of water vapor or greater per pound of air.

10. The process of claim 1 wherein exhaust gases from a primary throughdryer and a secondary throughdryer are used to control the cross-directional consistency profile, such that exhaust gas from the primary throughdryer is directed to areas of the web having the lowest consistency and exhaust gas from the secondary throughdryer is directed to areas of the web having the highest consistency.

11. The process of claim 1 where the recycled exhaust gas is used to increase the mean consistency of the web as well as control the cross-machine direction consistency profile.

12. The process of claim 1 wherein the recycled exhaust gas is directed to an exhaust gas recovery plenum and is thereafter drawn through the wet web by a vacuum box or vacuum roll.

13. The process of claim 12 wherein the exhaust gas recovery plenum comprises a plurality of independent gas passages spanning the cross-machine direction, the flow through which is individually and independently controlled by flow dampers.

14. The process of claim 13 wherein the exhaust gas is drawn through the wet web by a vacuum box which comprises a plurality of independent gas passages spanning the cross-machine direction of the box, the flow through which is individually and independently controlled by flow dampers.

15. The process of claim 14 wherein the number of gas passages in the exhaust gas recovery plenum is the same as the number of passages in the vacuum box.

16. The process of claim 14 wherein the number of gas passages in the exhaust gas recovery plenum is different than the number of passages in the vacuum box.

17. The process of claim 12 wherein the exhaust gas recovery plenum comprises a plurality of independently controlled steam or water nozzles spanning the cross-machine direction which differentially add moisture to the web.

18. The process of claim 12 wherein the exhaust gas recovery plenum is positioned adjacent to a plurality of independently controlled steam or water nozzles spanning the cross-machine direction which differentially add moisture to the web.

19. The process of claim 12 wherein the exhaust gas is drawn through the wet web by a vacuum box which comprises a plurality of independent gas passages spanning the cross-machine direction of the box, the flow through which is individually and independently controlled by flow dampers.

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20. The process of claim 12 wherein the exhaust gas recovery plenum comprises a plurality of independent gas passages spanning the cross-machine direction and a plurality of independently controlled steam or water nozzles which add moisture to the flow of exhaust gas through one or more of the gas passages.

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21. The process of claim 12 wherein the cross-machine direction temperature profile of the profiled web can be measured and used to control the consistency profiling using a feedback control loop.

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